IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

We claim as our invention:

1. (currently amended) A culturing device comprising:

a ~~at least one~~ culture container adapted to receive and to discharge a culture medium;

a porous cell culture insert removably received and providing a horizontal culture surface within the ~~at least one~~ culture container;

a ~~at least one~~ supply mechanism for introducing the culture medium into the ~~at least one~~ culture container and for discharging the culture medium from the ~~at least one~~ culture container; and

a ~~at least one~~ level sensor cooperating with the ~~at least one~~ culture container to sense a level of the culture medium for the ~~at least one~~ culture container, wherein the sensor controls the supply mechanism as a function of an output signal of the level sensor representing the level of the culture medium such that the device can achieve both a sustained submerged culture medium supply condition ~~can be achieved by the device, and that a~~ and a sustained basal culture medium supply condition, wherein said sustained basal culture medium supply condition allows for exposure of ~~can be achieved by the device allowing that the~~ cultured cells on said cell culture insert ~~can homogeneously be exposed~~ to gases, aerosols and particulate matter from above and culture medium from below through the porous cell culture insert.

2. (canceled)

3. (currently amended) A culturing device as defined in claim 1, further comprising a ~~at least one~~ pair of discharge lines in fluid communication with the ~~at least one~~ culture container.

4. (currently amended) A culturing device as defined in claim ~~3~~1, wherein there are ~~the at least one culture container comprises~~ a plurality of culture containers, and wherein ~~each pair of the discharge lines is associated with a respective one of the culture containers~~ each culture container is associated with a pair of discharge lines.

5. (currently amended) A culturing device as defined in claim ~~3~~4, wherein ~~the at least one culture container comprises a plurality of culture containers, and wherein~~ at least one pair of ~~the~~ discharge lines is associated with more than one of the individual culture containers.

6. (currently amended) A culturing device as defined in claim 1, wherein there are ~~the at least one culture container comprises~~ a plurality of culture containers, and wherein the plurality of culture containers are positioned so that ~~a~~ the horizontal culture surfaces ~~surface defined by the corresponding cell cultures~~ lie in a common horizontal plane.

7. (currently amended) A culturing device as defined in claim 1, wherein there are ~~the at least one culture container comprises~~ a plurality of culture containers, and wherein each ~~of the plurality of~~ culture container ~~containers~~ is connected to a common culture medium supply line.

8. (currently amended) A culturing device as defined in claim 7, wherein a culture medium supply line is connected to ~~the~~ at least one culture container and communicates with a riser on which ~~the~~ at least one level sensor is carried.

9. (currently amended) A culturing device as defined in claim 8, wherein the ~~at least one~~ level sensor is vertically adjustable relative to the riser.

10. (currently amended) A culturing device as defined in claim 1, wherein the ~~at least one~~ level sensor comprises a plurality of level sensors, and wherein at least one ~~of the plurality of~~ level sensor ~~sensors~~ includes a forked photoelectric barrier.

11. (previously amended) A culturing device as defined in claim 10, wherein at least one of the level sensors continuously measures the culture medium level.

12. (currently amended) A culturing device as defines in claim 1, wherein there are ~~the at least one level sensor comprises~~ a plurality of level sensors, and wherein at least one ~~of the plurality of~~ level sensor ~~sensors~~ includes a level switch that responds to a predetermined target level.

13. (currently amended) A culturing device as defined in claim 1, further comprising:

a plurality of culture containers

an exterior housing;

a plurality of discrete modules within the housing such that there is a culture container within each module

~~a plurality of discrete modules within the housing wherein at least one of the at least one culture container is arranged within each of the modules; and~~

a culture medium supply distribution system in fluid communication with a common culture medium supply line and with each of the modules.

14. (currently amended) A culturing device as defined in claim 13, wherein the supply distribution system has a single connection in fluid communication with the ~~at least one~~ supply mechanism, and wherein the single connection is disposed at a lowermost elevation of the supply distribution system.

15. (original) A culturing device as defined in claim 13, wherein the exterior housing has a plurality of separate connectors each coupled to a withdrawal line of a respective one of the discrete modules.

16. (currently amended) A culturing device as defined in claim 13, wherein each of the discrete modules includes a discrete temperature-control housing surrounding each ~~the at least one of the at least one~~ culture container within the corresponding discrete module, and wherein each temperature-control housing has a temperature-control medium inlet and a temperature-control medium discharge.

17. (original) A culturing device as defined in claim 16, wherein each temperature-control medium discharge is in fluid communication with an overflow apparatus lying in an upper region of the respective temperature-control housing, and wherein the overflow apparatus is positioned diametrically opposite to the temperature-control medium inlet within the respective temperature-control housing.

18. (original) A culturing device as defined in claim 17, wherein the temperature control medium inlet and discharge of the temperature-control housing of each of the discrete modules is connected in series relative to a flow path of the temperature-control medium.

19. (currently amended) A culturing device as defined in claim 1, wherein the ~~at least one~~ culture container is disposed within an exterior housing that can provide a sealed environment within an interior of the housing.

20. (currently amended) A culturing device as defined in claim 19, wherein the outer housing has a ~~at least one~~ connection for introducing a gaseous medium into the interior of the housing.

21. (original) A culturing device as described in claim 1, wherein certain components of the culturing device that must be sterilized are fabricated from materials that can withstand sterilization.

22. (currently amended) A culturing device as defined in claim 21, wherein the sterilizable materials are selected from a group consisting ~~comprising at least one~~ of glass and silicone.

23. (original) A culturing device as defined in claim 1, wherein the supply mechanism includes a bidirectional pump.

24. (original) A culturing device as described in claim 23, wherein the bidirectional pump is a peristaltic pump.

25. (currently amended) A culturing device as defined in claim 1, wherein there is ~~the at least one level sensor comprises~~ a pair of level sensors wherein one of the sensors controls the supply mechanism for the submerged supply condition and the other ~~of the sensors~~ sensor controls the supply mechanism for the basal supply condition.

26. (original) A culturing device as defined in claim 1, further comprising:

a programmable controller that can control a culture medium target level transducer in a time-dependent manner.

27. (currently amended) A culturing device as defined in claim 26, wherein the programmable controller can adjust a target level value periodically between at least two level values, a first level value corresponding to a liquid level that is a predetermined distance above a top side of a culture surface of the cell culture insert in the ~~at least one~~ culture container, and a second level value corresponding to a liquid level that is a predetermined distance below the first level.

28-31. (canceled)

C'd

32. (currently amended) A culturing device comprising:

a plurality of culture containers adapted to receive and to discharge a culture medium;

porous cell culture inserts, one for each of the plurality of culture containers, removably received within the culture containers, said ~~the~~ cell culture inserts each providing a horizontal culture surface wherein the plurality of culture containers are positioned so that the horizontal culture surfaces ~~surface provided by each of the culture containers~~ lie in a common horizontal plane;

a ~~at least one~~ supply mechanism for introducing the culture medium into the plurality of culture containers and for discharging the culture medium from the plurality of culture containers, and;

wherein a common culture medium supply line connected to the plurality of culture containers communicates with a riser on which at least one level sensor which is vertically adjustable relative to said riser is carried to sense a level of the culture medium for the plurality of culture containers, ~~and~~ wherein the sensor controls the supply mechanism as a function of an output signal of the level sensor representing the level of the culture medium such that the device can achieve both a sustained submerged culture medium supply condition and a sustained basal culture medium supply condition, wherein said sustained basal culture medium supply condition allows for exposure of ~~can both be achieved by the device, the basal control medium allowing that the~~ cultured cells on said cell culture insert ~~can homogeneously be exposed~~ to gases, aerosols and particulate matter from above and culture medium from below through the porous cell culture insert.